REMARKS

The following remarks are made in response to the Non-Final Office Action mailed February 26, 2009. Claims 17-19, 22, 23, 25, and 29-31 were rejected. With this Response, no claims have been amended. Claims 17-19, 22, 23, 25, and 29-31 remain pending in the application and are presented for reconsideration and allowance.

Claim Rejections under 35 U.S.C. § 102 and § 103

The Examiner rejected claims 17, 19, 22, 25, 29, and 31 under 35 U.S.C. § 102(b) as being anticipated by the Duff GB Patent No. 2 002 157.

The Examiner rejected claims 17 and 23 under 35 U.S.C. § 103(a) as being unpatentable over the Hirotomi EP Patent Application No. 0 430 493 in view of the Dietl et al. U.S. Patent No. 6,556,088.

The Examiner rejected claims 18 and 30 under 35 U.S.C. § 103(a) as being unpatentable over the Duff GB Patent No. 2 002 157 in view of the Kamas et al. U.S. Patent No. 6,429,799.

Independent claim 17 recites that an average value of the generated output frequencies over a certain time period is the desired frequency plus or minus a relative frequency error, wherein the control device is configured to drive the oscillator such that the least two generated output frequencies are alternated at a selected average switching frequency that is less than the at least two possible output frequencies, and a frequency divider is connected to the output of the oscillator and configured to reduce the relative frequency error generated at the selected average switching frequency, wherein the selected average switching frequency is selected to be smaller than a switching frequency necessary to obtain a desired relative frequency error without the frequency divider.

Independent claim 29 recites that the average value of the at least two generated output frequencies over a certain time period is the desired frequency plus or minus a relative frequency error, and the at least two generated output frequencies are alternated at a selected average switching frequency that is less than the at least two different output frequencies, and the frequency of the output signal generated by the oscillator is divided with a frequency divider to reduce the relative frequency error generated at the selected average switching frequency,

wherein the selected average switching frequency is selected to be smaller than a switching frequency necessary to obtain a desired relative frequency error without the frequency divider.

The Duff GB Patent simply does not teach or suggest, alone or combination with the other cited references, all of the limitations of independent claims 17 and 29. The Duff GB Patent does not teach or suggest a control device configured to drive the oscillator such that the at least two generated output frequencies are alternated at a **selected average switching frequency selected by the control device to be smaller than a switching frequency necessary to obtain a desired relative frequency error without the frequency divider** as recited independent claims 17 or alternating the at least two generated output frequencies at a selected average switching frequency selected to be smaller than a switching frequency necessary to obtain a desired relative frequency error without the frequency divider as recited in independent claim 29.

These limitations of independent claims 17 and 29 are not taught or suggested by the Duff GB Patent. These limitations define that **the selected average switching frequency is selected by the control device to obtain a desired frequency error, which would not be obtained with this switching frequency without the frequency divider**. In other words, in contrast to the Duff GB Patent, a time averaging property of the frequency divider is consciously employed by the control device defined in independent claims 17 and 29 to permit selection of a smaller switching speed than would otherwise be possible while still obtaining acceptable results.

As such, a smaller (i.e., slower) switching frequency of switching between the at least two output frequencies while still yielding a good approximation of the desired output frequency by reducing the relative frequency error generated at the selected average switching frequency is defined in independent claims 17 and 29.

One example embodiment having the limitations of independent claims 17 and 29 is described at page 8 of the clean version of the substitute specification, which explains the employment of the frequency dividers as illustrated in Figures 8A, 8B, and 8C of the Present Specification. Figure 8A illustrates the time characteristic of the voltage of the control signal and the time characteristic of the frequency of the voltage of the signal f_{OUT} generated by the

digitally controlled oscillator, and Figures 8B and 8C respectfully illustrate the time characteristic of the frequency and the voltage of the signal after the first and second frequency divider respectively to illustrate the effect of the frequency dividers which cause the averaging period to be extended. The example embodiment described at page 8 of the Present Specification, specifically states that the relative frequency error at the output of the digitally controlled oscillator is 3.7% in the illustrated example and at the output of the second frequency divider, the relative frequency error is only 0.22%.

The limitations of independent claim 17 (and similar limitations of independent claim 29) define that the **frequency divider is configured to reduce the relative frequency error generated at the selected average switching frequency**, wherein **the selected average switching frequency is selected by the control device to be smaller (i.e, slower) than a switching frequency necessary to obtain a desired relative frequency error without the frequency divider**. These limitations of independent claims 17 and 29 effectively exploit the averaging effects of the frequency divider to achieve even slower switching frequencies, and slower switching frequencies are desirable as slower frequencies generally are easier to handle and control and can be realized with less expensive and/or more precise circuitry. Furthermore, without recognizing the time averaging properties of a frequency divider, a person skilled in the art would select a considerably higher switching frequency than can be used with the invention defined in independent claims 17 and 29 which specifically exploits the averaging effects of the frequency divider.

Furthermore, dependent claims 18-19, 22-23, and 25 further define patentably distinct independent claim 17. Dependent claims 30-31 further define patentably distinct independent claim 29. Therefore, these dependent claims are also believed to be allowable.

Therefore, Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. § 102 and § 103 rejections to the claims, and requests allowance of claims 17-19, 22, 23, 25, and 29-31.

CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 17-19, 22, 23, 25, and 29-31 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 17-19, 22, 23, 25, and 29-31 are respectfully requested.

No fees are required under 37 C.F.R. 1.16(h)(i). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 50-0471.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to Patrick G. Billig at Telephone No. (612) 573-2003, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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